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Integrated Report Coordinator
Montana Department of Environmental Quality
PO Box 200901
Helena, MT 59620-0901

Re: Comment on Draft 2012 Integrated Report

To Whom It May Concern:

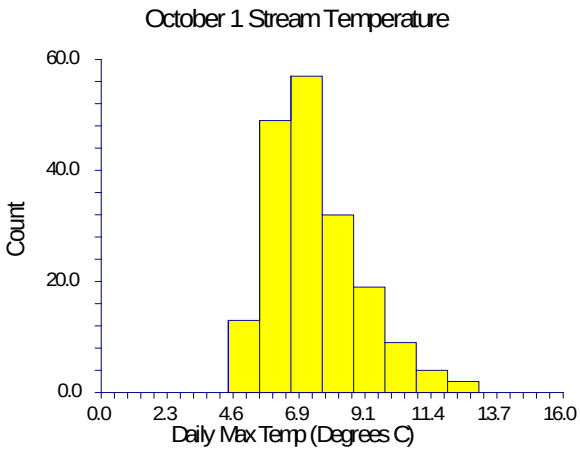
Please accept these comments on the 2012 Draft Integrated Report for Montana on behalf of Plum Creek Timber Company:

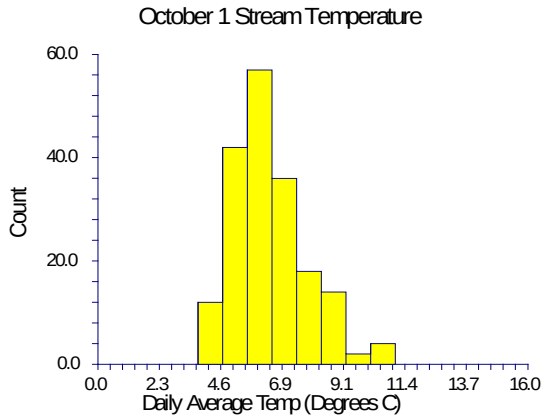
1. We support DEQs decision to delist Swift Creek in the 2012 IR, and thank DEQ for taking the time to collect the necessary data to confirm the beneficial use support status.

2. DEQ should be commended for developing repeatable and transparent procedures for evaluating beneficial use support.

3. We continue to have concerns about the technical justification for a benthic algae criterion of 120 mg/Chl*a*/m^2 (or 35 g AFDW/m^2) in the Water Quality Assessment Method Template for nutrients in mountainous and transitional streams. We commented on this issue when the assessment methods were distributed as a draft last year, but the response given was to read the technical justification in the methodology (Section B.1.2). We have re-reviewed this justification and still do not feel it is technically supportable. The basis for the algae criterion rests primarily on a whole-stream nutrient addition study in a single C-3 warm-water prairie stream in Box Elder Creek of extreme southeastern Montana (400 miles from the mountainous nutrient ecoregions). In this study, DEQ found that DO levels exceeded standards in the fall when benthic algae levels exceeded 127 mg/Chl*a*/m^2. While DEQ does not propose applying this algae criterion to nutrient determinations in the prairie streams of eastern Montana where the study was done, they do for mountain streams of western Montana. The justification for this in the assessment method documentation is that "…*we would not expect western Montana streams manifesting similar algal densities to be able to compensate due to their having cooler water temperatures, as their temperatures are often about the same at this time of year*." The assessment method documentation notes stream temperatures in Box Elder Creek when low DO was observed on about October 1st "…*ranged from about 12-16°C*." Plum Creek has collected extensive temperature data in wadeable streams in western Montana since 1994. We queried our database and

found 185 records of continuous stream temperature in 65 different streams during this time. The distribution of October 1st stream temperatures (both daily maximum and daily average temperatures) are shown in the histograms below. For daily maximum temperature, only two records had daily maximum temperatures above 12°C. And in all sites, daily average temperatures were cooler than 12°C. The mean daily maximum was 7.4°C and the mean daily average was 6.4°C. These temperatures are substantially cooler than what was noted during this study in Box Elder Creek, and would likely pose a significant mediating factor on DO depletion. Additionally, there are other factors in the mountain ecoregions that would likely result in less significant DO risk, including steeper stream gradients leading to higher rates of re-aeration. For all these reasons, we do not believe that a proposed algae criterion of 120 mg/Chl*a*/m^2 (or 35 g AFDW/m^2) is supportable. If DEQ would like further documentation of the temperature data summarized in this letter, we would be happy to provide it.





We agree with DEQ that an algae criterion should be included as part of the nutrient impairment evaluations, especially given the weak correlations between nutrient concentrations and in-stream response variables. We recommend that DEQ revert back to the recreation standard level of protection from nuisance conditions, which according to the assessment method documentation (Section B.1.1) is 165 mg/Chl*a*/m^2. While DEQ notes in this section that chl*a* data are variable, and sampling currently requires only 11 samples, we don't think the criterion should be arbitrarily adjusted to account for sampling error. The criterion should be set at the use impairment threshold, and monitoring methods should be revised to determine when this level is exceeded.

Thank you for this opportunity to comment.

Sincerely,

Brian D. Sugden

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Forest Hydrologist